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CLAIMS

1.- Miniaturised relay characterised in that it comprises:

- a first zone facing a second zone,
- a first condenser plate (3),
- a second condenser plate (9) arranged in said second zone, in which said second plate is smaller than or equal to said first plate,
- an intermediate space (25) arranged between said first zone and said second zone,

- a conductive element (7) arranged in said intermediate space (25), said conductive element (7) being mechanically independent from said first zone and second zone and being suitable for effecting a movement across said intermediate space (25) depending on voltages present in said first and second condenser plates,

- a first contact point (15) of an electric circuit, a second contact point (17) of said electric circuit, in which said first and second contact points (15, 17) define first stops (13), in which said conductive element (7) is suitable for entering into contact with said first stops (13) and in which said conductive element (7) closes said electric circuit when in contact with said first stops (13).

2.- Relay according to claim 1, characterised in that said first contact point (15) is between said second zone and said conductive element (7).

3.- Relay according to one of claims 1 or 2, characterised in that said first plate is in said second zone.

4.- Relay according to one of claims 1 or 2, characterised in that said first plate is in said first zone.

5.- Relay according to one of claims 1 to 4, characterised in that said second contact point (17) is likewise in said second zone.

6.- Relay according to any of claims 4 or 5, characterised in that it comprises, additionally, a third condenser plate (11) arranged in said second zone, in which said third condenser plate (11) is smaller than or  
5 equal to said first condenser plate (3), and in which said second and third condenser plates are, together, larger than said first condenser plate (3).

7.- Relay according to one of claims 4 or 5, characterised in that it comprises, additionally, a third condenser plate (11) arranged in said  
10 second zone and a fourth condenser plate (5) arranged in said first zone, in which said first condenser plate (3) and said second condenser plate (9) are equal to each other, and said third condenser plate (11) and said fourth condenser plate (5) are equal to each other.

15 8.- Relay according to claim 7, characterised in that said first, second, third and fourth condenser plates are all equal to each other.

9.- Relay according to one of claims 7 or 8, characterised in that it comprises, additionally, a fifth condenser plate (35) arranged in said first  
20 zone and a sixth condenser plate (37) arranged in said second zone, in which said fifth condenser plate (35) and said sixth condenser plate (37) are equal to each other.

10.- Relay according to claim 9, characterised in that it comprises,  
25 six condenser plates arranged in said first zone and six condenser plates arranged in said second zone.

11.- Relay according to any of claims 1 to 10, characterised in that it comprises a second stop between said first zone and said conductive  
30 element (7).

12.- Relay according to any of claims 1 to 11, characterised in that it comprises a third contact point (21) arranged between said first zone and

said conductive element (7), in which said third contact point (21) defines a second stop, such that said conductive element (7) closes a second electric circuit when in contact with said second contact point (17) and said third contact point (21).

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13.- Relay according to claim 12, characterised in that said conductive element (7) comprises a hollow cylindrical part (31) which defines a axis, in the interior of which is housed said second contact point (17), and a flat part (33) which protrudes from one side of said radially  
10 hollow cylindrical part (31) and which extends in the direction of said axis, in which said flat part (33) has a height, measured in the direction of said axis, which is less than the height of said cylindrical part (33) measured in the direction of said axis.

15 14.- Relay according to claim 12, characterised in that said conductive element (7) comprises a hollow parallelepipedic part which defines a axis, in the interior of which is housed said second contact point (17), and a flat part (33) which protrudes from one side of said radially hollow parallelepipedic part (31) and which extends in the direction of said  
20 axis, in which said flat part (33) has a height, measured in the direction of said axis, which is less than the height of said parallelepipedic part, measured in the direction of said axis.

25 15.- Relay according to any of claims 1 to 10, characterised in that it comprises a third contact point (21) and a fourth contact point (23) arranged between said first zone and said conductive element (7), in which said third contact point (21) and fourth contact point (23) define second stops (19), such that said conductive element (7) closes a second electric circuit when in contact with said third contact point (21) and fourth contact  
30 point (23).

16.- Relay according to any of claims 1 to 15, characterised in that each of the assemblies of said condenser plates arranged in each of said

first and second zones has central symmetry with respect to a centre of symmetry, and in which said centre of symmetry is superposed to the centre of masses of said conductive element (7).

5           17.- Relay according to any of claims 1 to 15, characterised in that the assembly of said condenser plates arranged in each of said first and second zones has central asymmetry, thus generating a moment of forces with respect to the centre of masses of said conductive element (7).

10           18.- Relay according to any of claims 15 to 17, characterised in that between said first zone and said second zone extend two lateral walls (29), in which there is play between said lateral walls (29) and said conductive element (7), said play being sufficiently small so as to geometrically prevent said conductive element (7) from simultaneously entering into  
15           contact with a contact point of the group formed by said first and second contact points (15, 17) and with a contact point of the group formed by said third and fourth contact points (21, 23).

            19.- Relay according to any of claims 1 to 18, characterised in that  
20           said conductive element (7) has rounded external surfaces.

            20.- Relay according to claim 19, characterised in that said conductive element (7) is cylindrical.

25           21.- Relay according to claim 19, characterised in that said conductive element (7) is spherical.

            22.- Relay according to any of claims 1 to 20, characterised in that said conductive element (7) has an upper face and a lower face, said upper  
30           and lower faces being perpendicular to said movement of said conductive element (7), and at least one lateral face, in which said lateral face has slight protuberances.

23.- Relay according to any of claims 1 to 22, characterised in that said conductive element (7) is hollow.

5 24.- Relay according to claim 3, characterised in that said first condenser plate (3) and said second condenser plate (9) have the same surface area.

25.- Relay according to claim 4, characterised in that said first condenser plate (3) has a surface area which is equal to or double the  
10 surface area of said second condenser plate (9).

26.- Relay according to any of claims 1 to 25, characterised in that one of said condenser plates (3, 5, 9, 11, 35, 37) is, simultaneously one of said contact points (15, 17, 21, 23).

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27.- Use of a relay according to any of claims 1 to 26, as accelerometer.

28.- Use of a relay according to any of claims 1 to 26, as  
20 accelerometer in airbags.

29.- Use of a relay according to any of claims 1 to 26, as tiltmeter.

30.- Use of a relay according to any of claims 1 to 26, as detector of  
25 Coriolis forces.

31.- Use of a relay according to any of claims 1 to 26, as pressure sensor.

30 32.- Use of a relay according to any of claims 1 to 26, as microphone.

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33.- Use of a relay according to any of claims 1 to 26, as flow sensor.

5 34.- Use of a relay according to any of claims 1 to 26, as temperature sensor.

35.- Use of a relay according to any of claims 1 to 26, for acoustic applications.

10 36.- Use of a relay according to any of claims 1 to 26, as gas sensor.

37.- Use of a relay according to any of claims 1 to 26, as magnetic field sensor.

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